

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) An information processing terminal comprising:
 - an execution section containing a plurality of software pieces;
 - a resource section including ~~at least one resource~~ a plurality of resources to be accessed by at least one of the software pieces;
 - a resource access section for notifying said resource section of a request, which is generated by a software piece of said execution section, to access at least one resource among the plurality of resources; ~~mediating access by the software pieces in the execution section to the at least one resource by using a generic interface for accessing the resource section;~~
 - a state of use determination section for determining whether or not the at least one resource is being currently used ~~or not~~;
 - a priority management section for managing a priority level with respect to a combination of the plurality of software pieces and the plurality of resources;
 - an exploiting-software priority acquisition management section for acquiring, with reference to said priority management section, managing a priority level of an exploiting-software piece, wherein the exploiting-software piece is a software piece currently using the at least one resource with respect to the at least one resource which is the target of the requested access;
 - a requesting-software priority acquisition section for acquiring, with reference to said priority management section, a priority level of a requesting-software piece, wherein the requesting-software piece is a software piece which is making a request to access the at least one resource with respect to the at least one resource which is a target of the requested access; and
 - a conflict determination section for comparing the priority level acquired from ~~the said~~ exploiting-software priority management section and the priority level acquired from ~~the said~~ requesting-software priority acquisition section, and determining which one of the exploiting-software piece and the requesting-software piece should be granted access to the at least one resource,
 - wherein, based on the result of the determination by ~~the said~~ state of use determination section and the result of the determination by ~~the said~~ conflict determination section, ~~the said~~ resource access section is operable to manage an access to the at least one resource which is the target of the requested access.

~~_____ (A) if the at least one resource is not being currently used, or if the priority level of the requesting software piece is higher than the priority level of the exploiting software piece, access the at least one resource in accordance with the request of the requesting software piece, and notify an error to the exploiting software piece, or~~

~~_____ (B) if the priority level of the requesting software piece is lower than the priority level of the exploiting software piece, notify an error to the requesting software piece.~~

2. (Currently Amended) The information processing terminal according to claim 1, further comprising a ~~software-by-software~~ resource state management section for managing a state of use of the plurality of resources, wherein at least one resource with respect to each software piece,

~~wherein,~~ when receiving a request to access the at least one resource from the said execution section, ~~the said resource access section refers~~ is operable to refer to the ~~software-by-software said resource state management section to determine whether or not the request to access is from a software piece which surrendered the at least one resource during a previous use of the at least one resource, and~~

~~if so determined, notifies,~~ said resource access section determines that the request to access is from a software piece which surrendered the at least one resource during a previous use of the at least one resource, said resource access section is operable to notify the surrendering software piece, in order to cause the surrendering software piece to execute, if necessary, initialization, to the software piece that the surrendering software piece surrendered the at least one resource during its previous use.

3. (Currently Amended) The information processing terminal according to claim 1, wherein,

if the at least one resource is surrendered from a software piece having a lower priority to a software piece having a higher priority, ~~the said resource access section notifies to~~ is operable to notify the surrendering software piece that the at least one resource has been surrendered, and

when the at least one resource is later released and the software piece having the lower priority regains access to the at least one resource, ~~the said resource access section notifies to~~ is

operable to notify the releasing software piece that the at least one resource has been surrendered to another software piece.

4. (Currently Amended) The information processing terminal according to claim 1, wherein;

if the at least one resource is surrendered from a software piece having a lower priority to a software piece having a higher priority, ~~the said resource access section~~ is operable to cancel any process which is currently being executed by the software piece having the lower priority and thereafter ~~determines~~ determine whether or not it is necessary to reset each of the at least one resource needs to be reset, and

if said resource access section determines that any resource needs to be reset, ~~the said resource access section~~ is operable to access the resource after resetting the resource.

5. (Currently Amended) The information processing terminal according to claim 4, wherein;

if the at least one resource is surrendered from a software piece having a lower priority to a software piece having a higher priority, ~~the said resource access section~~ is operable to cancel any process which is currently being executed by the software piece having the lower priority; and thereafter ~~determines~~ determine whether or not it is necessary to reset each of the at least one resource needs to be reset, and

if said resource access section determines that any resource needs to be reset, ~~the said resource access section~~ performs is operable to perform a predetermined reset process which is previously registered by the software piece having the higher priority and thereafter ~~accesses~~ access the resource in accordance with a request from the software piece having the higher priority.

6. (Currently Amended) The information processing terminal according to claim 1, further comprising a ~~software-by-software~~ resource state management section for managing a state of use of the plurality of at least one resource with respect to each software piece resources,

wherein ~~the said resource access section~~ performs is operable to perform a reset process for the at least one resource on behalf of a software piece which has once surrendered the at least

one resource but regained access to the at least one resource upon release of the at least one resource by another software piece, the reset process comprising reading from ~~the software by software~~ said resource state management section the state of use of the at least one resource which existed when the at least one resource was surrendered and resetting the at least one resource to ~~that the state of use read from said resource state management section~~, and
 wherein, after performing the reset process for the at least one resource, said resource access section is operable to access thereafter accesses the at least one resource in accordance with a request from the software piece.

7. (Currently Amended) The information processing terminal according to claim 1, further comprising a decryption section for decrypting priority levels which are obtained from software pieces in an encrypted form,

 wherein the determination made by ~~the said~~ conflict determination section is based on a result of the decryption by ~~the said~~ decryption section.

8. (Currently Amended) The information processing terminal according to claim 1, wherein the determination made by ~~the said~~ conflict determination section is based not only on the priority level assigned to each software piece but also on a priority level which is assigned to each of ~~modules~~ module loaded or linked by ~~the each~~ software piece.

9-14. (Cancelled)

15. (New) The information processing terminal according to claim 1, further comprising a resource state management section for managing a state of use of the plurality of resources,

 wherein said conflict determination section is operable to acquire, from said resource state management section, information regarding at least one of a number of at least one resource which an exploiting-software piece and a requesting-software piece are using and an amount of time which an exploiting-software piece and a requesting-software piece are using the at least one resource, and determine, based on the information acquired from said resource state management section, a priority level of a software piece.

16. (New) The information processing terminal according to claim 1, further comprising a resource state management section for managing a state of use of the plurality of resources, wherein:

the plurality of resources each include a screen resource; and

said conflict determination section, if a request to access a resource other than a screen resource is received from a software piece, is operable to acquire, from said resource state management section, information concerning a state of use of the screen resource which an exploiting-software piece and a requesting-software piece are using, and determine, based on the information acquired from said resource state management section, a priority level of a software piece.

17. (New) The information processing terminal according to claim 16, wherein:

said resource state management section is operable to notify, if a change in a state of use of the screen resource is detected, said conflict determination section of the change in the state of use of the screen resource; and

said conflict determination section is operable to take a request from a plurality of software pieces which are requesting to access a resource other than a screen resource, and, if one software piece has been solely granted access to the resource which is the target of the requested access, once again determine, upon receiving the notification from said resource state management section, a priority level with respect to an access to the resource which is the target of the requested access.

18. (New) An information processing terminal comprising:

an execution section containing a plurality of software pieces;

a resource section including a plurality of resources to be accessed by at least one of the software pieces;

a resource access section for notifying said resource section of a request, which is generated by one of the software pieces, to access at least one resource among the plurality of resources;

a state of use determination section for determining whether or not the at least one resource is being currently used;

a priority management section for managing a priority level of the plurality of software pieces;

an exploiting-software priority acquisition section for acquiring, with reference to said priority management section, a priority level of an exploiting-software piece, which is a software piece currently using the at least one resource which is a target of the requested access;

a requesting-software priority acquisition section for acquiring, with reference to said priority management section, a priority level of a requesting-software piece, which is a software piece which is making a request to access the at least one resource;

a resource state management section for managing a state of use of the plurality of resources; and

a conflict determination section for determining, by using the priority level acquired by said exploiting-software priority acquisition section, the priority level acquired by said requesting-software priority acquisition section, and a state of use of a resource other than the at least one resource which is the target of the requested access, which one of the exploiting-software piece and requesting-software piece should be granted access to the at least one resource,

wherein, based on the result of the determination by said state of use determination section and the result of the determination by said conflict determination section, said resource access section is operable to manage an access to the at least one resource which is the target of the requested access.

19. (New) The information processing terminal according to claim 18, wherein

when receiving a request to access the at least one resource from said execution section, said resource access section is operable to refer to said resource state management section to determine whether or not the request to access the at least one resource is from a software piece which surrendered the at least one resource during a previous use of the least one resource, and

if said resource access section determines that the request to access is from a software piece which surrendered the at least one resource during a previous use of the at least one resource, said resource access section is operable to notify the surrendering software piece, in

order to cause the surrendering software piece to execute, if necessary, initialization, that the surrendering software piece surrendered that at least one resource during its previous use.

20. (New) The information processing terminal according to claim 18 wherein,
if the at least one resource is surrendered from a software piece having a lower priority to a software piece having a higher priority, said resource access section is operable to notify the surrendering software piece that the at least one resource has been surrendered, and
when the at least one resource is later released and the software piece having the lower priority regains access to the at least one resource, said resource access section is operable to notify the releasing software piece that the at least one resource has been surrendered to another software piece.
21. (New) The information processing terminal according to claim 18, wherein
if the at least one resource is surrendered from a software piece having a lower priority to a software piece having a higher priority, said resource access section is operable to cancel any process which is currently being executed by the software piece having the lower priority and thereafter determine whether or not each of the least one resource needs to be reset, and
if said resource access section determines that any resource needs to be reset, said resource access section is operable to access the resource after resetting the resource.
22. (New) The information processing terminal according to claim 21, wherein
if the at least one resource is surrendered from a software piece having a lower priority to a software piece having a higher priority, said resource access section is operable to cancel any process which is currently being executed by the software registered by the software piece having the lower priority, and thereafter determine whether or not each of the at least one resource needs to be reset, and
if said resource access section determines that any resource needs to be reset, said resource access section is operable to perform a predetermined reset process which is previously registered by the software piece having the higher priority and thereafter access the resource in advance with a request from the software piece having the higher priority.

23. (New) The information processing terminal according to claim 18, wherein said resource access section is operable to perform a reset process for the at least one resource on behalf of a software piece which has once surrendered the resource but regained access to the at least one resource upon release of the at least one resource by another software piece, the reset process comprising reading from said resource state management section the state of use of the resource which existed when the at least one resource was surrendered and resetting the at least one resource to the state of use read from said resource state management section, and after performing the reset process for the at least one resource, said resource access section is operable to access the at least one resource in accordance with a request from the software piece.
24. (New) The information processing terminal according to claim 18, further comprising a decryption section for decrypting priority levels which are obtained from software pieces in an encrypted form, wherein the determination made by said conflict determination section is based on a result of the decryption by said decryption section.
25. (New) The information processing terminal according to claim 18, wherein the determination made by said conflict determination section is based not only on the priority level assigned to each software piece but also on a priority level which is assigned to each module loaded or linked by each software piece.
26. (New) The information processing terminal according to claim 18, wherein said conflict determination section is operable to acquire, from said resource state management section, information regarding at least one of a number of at least one resource which an exploiting-software piece and a requesting-software piece are using and an amount of time which an exploiting-software piece and a requesting-software piece are using the at least one resource, and determine, based on the information acquired from said resource state management section, a priority level of a software piece.
27. (New) The information processing terminal according to claim 18, wherein:

the plurality of resources include a screen resource; and

said conflict determination section, if a request to access a resource other than a screen resource is received from the plurality of software pieces, is operable to acquire, from said resource state management section, information concerning a state of use of a screen resource which is being used by an exploiting-software piece and a requesting-software piece, and, based on the information acquired from said resource state management section, determine a priority level of a software piece.

28. (New) The information processing terminal according to claim 27, wherein:

said resource state management section is operable to notify, if a change in a state of use of the screen is detected, said conflict determination section of the change in the state of use of the screen resource; and

said conflict determination section is operable to take a request from a plurality of software pieces which are requesting to access a resource other than a screen resource, and, if one software piece has been solely granted access to the resource which is the target of the requested access, once again determine, upon receiving from the notification from said resource state management section, a priority level with respect to an access to the resource which is the target of the requested access.

29. (New) An information processing method comprising:

notifying a request, which is made by one of the software pieces of an execution section containing a plurality of software pieces, to access a resource to a resource section containing a plurality of resources, which are to be accessed by one of the plurality of software pieces;

determining whether or not a resource is being used;

managing a priority level of a combination of the plurality of software pieces and the plurality of resources;

acquiring, with reference to information managed by said managing of the priority level, a priority level of an exploiting-software piece with respect to a resource, wherein the exploiting-software piece is a software piece currently using the resource which is a target for access requested by the exploiting-software piece;

acquiring, with reference to information managed by said managing of the priority level,

a priority level of a requesting-software piece with respect to a resource which is the target of the request, wherein the requesting-software piece is a software piece currently requesting the access to the resource; and

comparing the priority level acquired in said acquiring of the priority level of the exploiting-software piece and the priority level acquired in said acquiring of the priority level of the requesting-software piece, and determining which one of the exploiting-software piece and the requesting-software piece should be granted access to the resource,

wherein, based on the result of the determination by said determining whether the resource is being used and the determination by said comparing of the priority levels, said notifying of the request manages an access to the resource which is the target of the requested access.

30. (New) The information processing method according to claim 29, further comprising managing a state of use of the plurality of resources, wherein

said notifying of the request performs a reset process for the resource on behalf of a software piece which has once surrendered the resource but regained access to the resource upon release of the resource by another software piece, the reset process comprising reading the state of use, managed by said managing of the state of use, of the resource which existed when the resource was surrendered and resetting the resource to the read state of use, and

after performing the reset process for the resource, said notifying of the request accesses the resource in accordance with a request from the software piece.

31. (New) The information processing method according to claim 29, further comprising managing a state of use of the plurality of resources, wherein:

the plurality of resources include a screen resource; and

said comparing of the priority levels, if a request to access a resource other than a screen resource is received from the plurality of software pieces, acquires, from said managing of the state of use, information concerning a state of use, which is managed by said managing of the state of use, of a screen resource which is being used by an exploiting-software piece and a requesting-software piece, and based on the acquired information, determines a priority level for a software piece.

32. (New) The information processing method according to claim 31, wherein said comparing of the priority levels takes a request from a plurality of software pieces which are requesting to access a resource other than a screen resource, and, if one software piece has been solely granted access to the resource which is the target of the requested access, upon detecting a change in a state of use of a screen resource in said managing of the state of use, determines once again, based on the changed state of use of the screen resource, a priority level of an access to the resource which is the target of the request to access.

33. (New) An information processing method comprising:
notifying a resource section containing a plurality of resources, which are to be accessed by a software piece, of a request, which is made by a software piece of an execution section containing a plurality of software pieces, to access the at least one resource;
determining whether or not the at least one resource is being currently used;
managing a priority level of the plurality of software pieces;
acquiring, with reference to information managed by said managing of the priority level of the plurality of software pieces, a priority level of an exploiting-software piece, which is a software piece currently using the at least one resource;
acquiring, with reference to information managed by managed by said managing of the priority level of the plurality of software pieces, a priority level of a requesting-software piece, which is a software piece currently requesting the access to the at least one resource;
managing a state of use of the plurality of resources; and
determining which one of the exploiting-software piece and the requesting-software piece should be granted access to the at least one resource by using the priority level acquired in said acquiring of the priority level of the exploiting-software piece, the priority level acquired in said acquiring of the requesting-software piece, and a state of use, which is managed in said managing of the state of use of the plurality of resources, of a resource other than the at least one resource which is the target of the request for access,
wherein, based on the result of the determination by said determining whether the at least one resource is being currently used and the determination by said determining which one of the

exploiting-software piece and the requesting-software piece, said notifying the resource section manages an access to the at least one resource which is a target of the requested access.

34. (New) The information processing method according to claim 33, wherein said notifying the resource section performs a reset process for the at least one resource on behalf of a software piece which has once surrendered the at least one resource but regained access to the at least one resource upon release of the at least one resource by another software piece, the reset process comprising reading the state of use, managed by said managing of the state of use of the plurality of resources, of the at least one resource which existed when the at least one resource was surrendered and resetting the at least one resource to the read state of use, and

after performing the reset process for the resource, said notifying the resource section accesses the at least one resource in accordance with a request from the software piece.

35. (New) The information processing method according to claim 33, wherein:
the plurality of resources include a screen resource as one of the resources; and
said determining which one of the exploiting-software piece and the requesting-software piece, if a request to access a resource other than a screen resource is received from the plurality of software pieces, acquires information concerning a state of use of a screen resource which is used by an exploiting-software piece and a requesting-software piece, and based on the acquired information, determines a priority level for a software piece.

36. (New) The information processing method according to claim 35, wherein said determining which one of the exploiting-software piece and the requesting-software piece, if a request to access a resource other than a screen resource is received from a plurality of software pieces, if one software piece has been solely granted access to the resource which is the target of the requested access, and if a change in a state of use of the screen is detected in said managing of the state of use of the plurality of resources, once again determines, based on the changed state of the state of use of the screen resource, a priority level with respect to the at least one resource which is a target of the requested access.